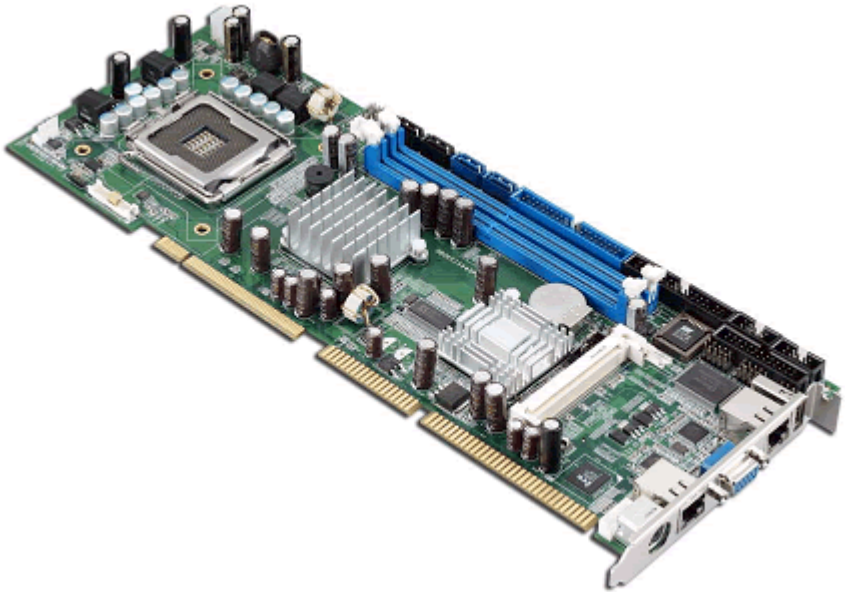
APPENDIX – Setting of 8193 CPU Card

Industrial Single Board Computer

USER'S Guide



Product Specifications

Form Factor	■ Full-size PICMG1.0 Single Board Computer ■Dimensions: 338.6mm(L) x 122mm(W) (13.33”x4.8”) ■PCI Local Bus Specification, Rev 2.3 compliant
Processors	■Single Processor with Intel(R) Land Grid Array 775(LGA775)package ■ Intel(R) Pentium(R) D or Pentium(R) 4 Processor ■ 1066/800/533MHz Front Side Bus ■ Auto-selection of CPU frequency and core voltage ■ Intel Hyper-Threading Technology supported
Chipsets	■Intel 945G Graphic Memory Control Hub(GMCH) ■ Intel I/O Controller Hub 7 (ICH7)
BIOS	■Support for 4 Mb Firmware Hub. ■BIOS write protection provides anti-virus capability ■DMI BIOS Support ■Supports system soft power-off (via ATX power supply) ■Supports PXE Remote Boot ■Supports boot from USB Device
System Memory	■Supports unbuffered, non-ECC, Dual Channel DDR2 DIMM 400/533/667MHz; up to 2 DIMMs, maximum 2GB System Memory
Graphics	■GMCH analog RGB output on the faceplate. ■Resolution up to 2048 x 1536 at 75Hz. ■24-bit LVDS support, panel resolution up to 1600x1200
PCI Support	■PCI Golden Fingers ■Mini PCI card slot x1
Bus on PICMG 1.0	■Supports ISA Interface, I/O & IRQ only; no DMA or bus master support ■Supports one PCI bus (32-bit at 33MHz)
I/O Controller	■LPC Super IO controller Win bond W83627EHF
On-board LAN	■Onboard Marvell 88E8053 supports 2 GbE ports on the faceplate.
ISA Interface	■ PCI to ISA Bridge used - ITE8888G
Expansion	■ PICMG 1.0, Mini PCI socket
Peripheral Support	■ One IDE Channel supports one Ultra ATA 100/66/33 device(Master) ■ One Compact Flash I/II port via IDE (Slave) ■ Supports 4 channels SATA II (3Gbps) ■ 7 USB 2.0 Ports: three 5x2 pin header for internal ,one TYPE-A connector on bracket ■ One Mini PCI card slot ■ Two COM ports (Internal Pin Header) COM 1: RS-232, COM 2: RS-232/ RS-422/RS-485 ■ One internal bi-direction parallel port with SPP/ECP/EPP mode ■ One internal AC’97 interface connector ■ One internal floppy port ■ On bracket PS/2 KB/Mouse connector
watchdog Timer	■1-255 step, seconds/minutes, can be set with software on Super I/O
Operating Temp.	■0℃ - 60℃
Certifications	■CE, FCC Class A

Table 1-1. 8193 Specifications

Mechanical Dimensions

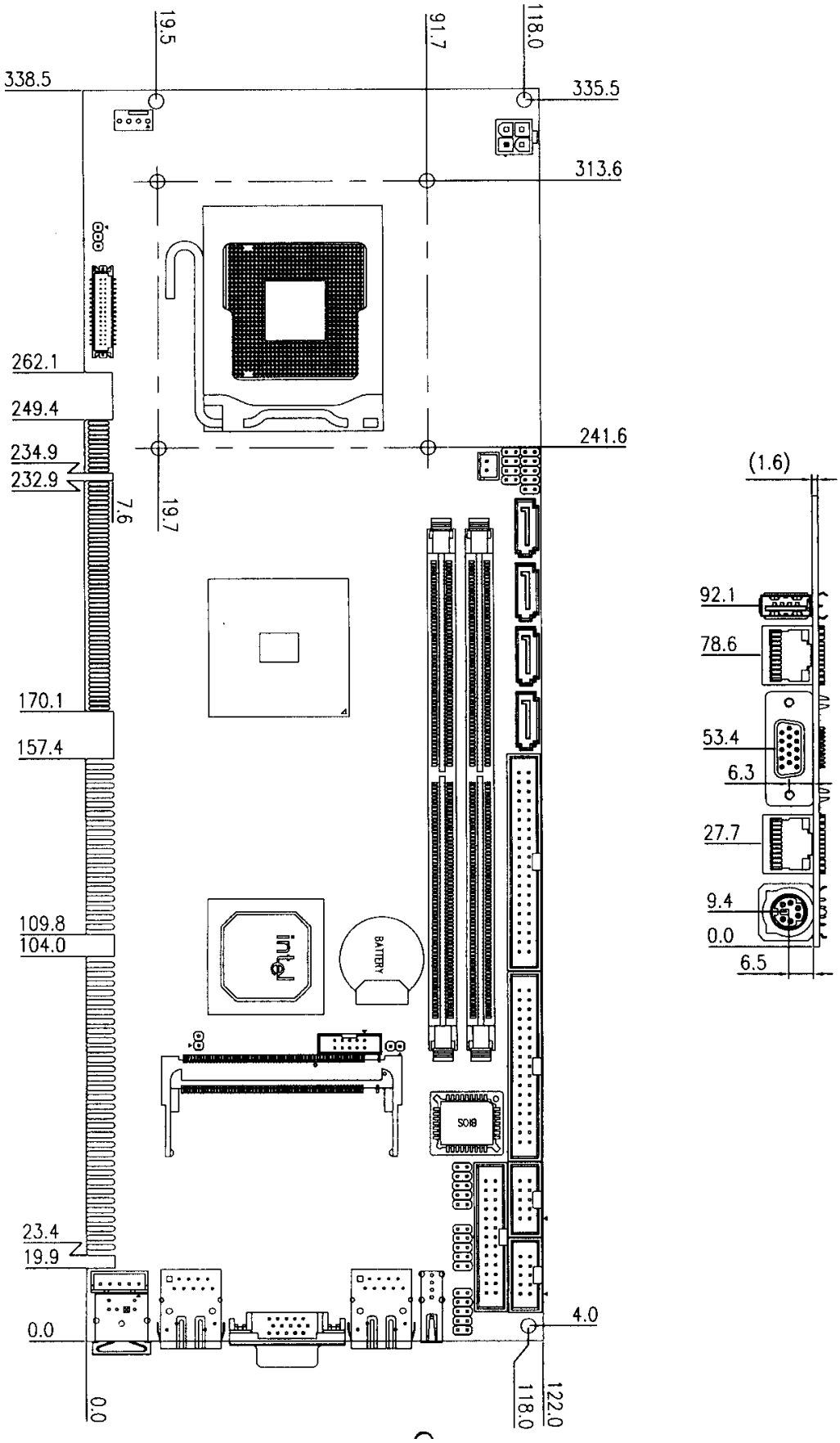


Figure 1-2. 8193 Mechanical Dimensions

Jumper Settings and Pin Definitions

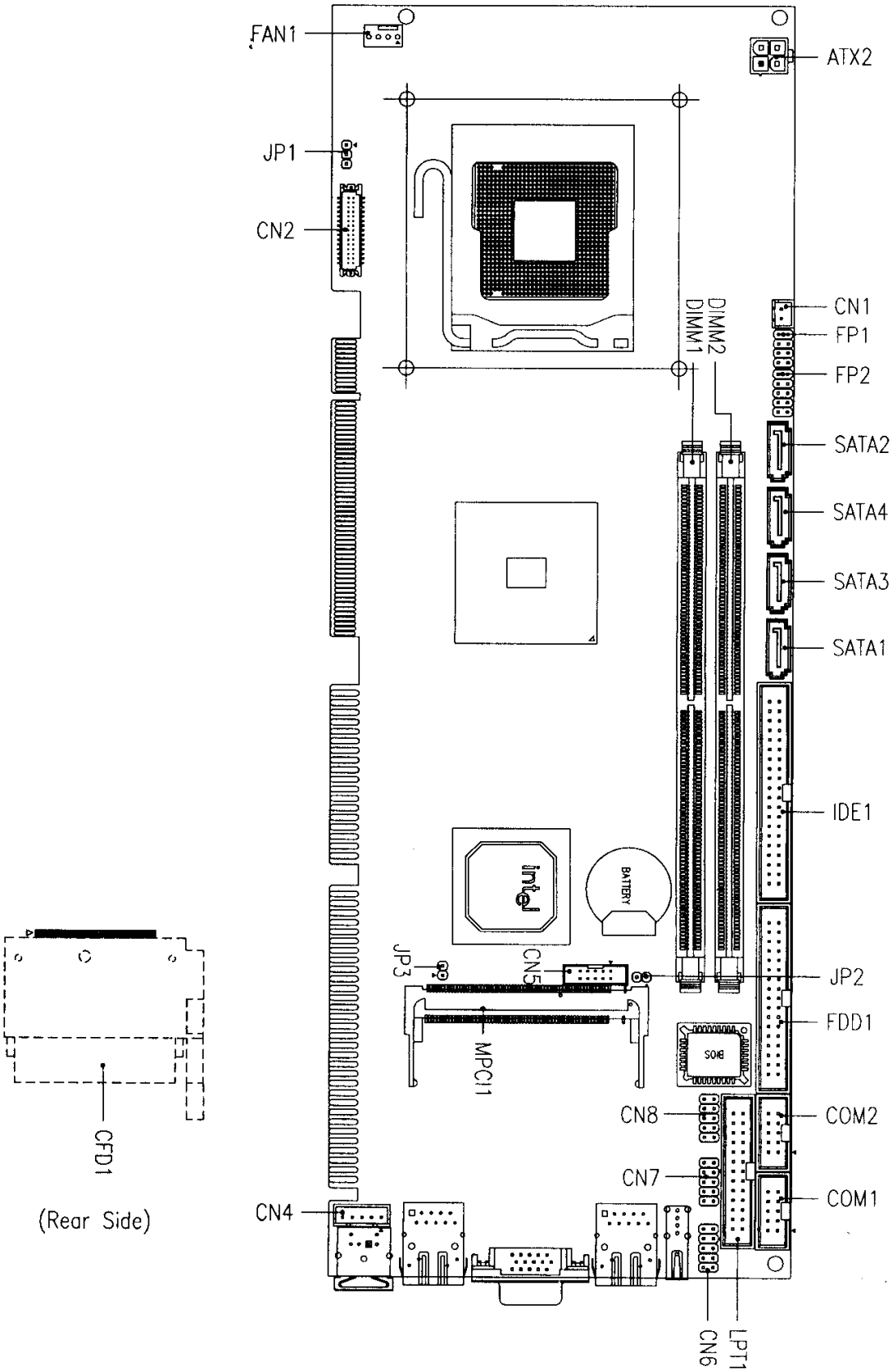


Figure 2-2. Main Board Jumper and Connector Locations

Jumper Settings

Use the information in the following tables to change the jumpers

Jumper	Function
JP1	LCD Voltage Selection
JP2	Clear CMOS
JP3	CF Card Master/Slave select

Table 2-1. Jumper Location Description

To ensure the correct configuration, the following describes how to set the jumpers to enable/disable or change functions.

For jumper locations please refer to jumper location diagram.

LCD (TTL/LVDS-LCD) Voltage Selection (JP1: 3-pin 2.54mm pitch header

Function	JP1
+5v	1-2
+3.3v(Default)	2-3

Table 2-2. LCD (TTL/LVDS-LCD) Voltage Selection

Clear CMOS setting (JP2: 2-pin 2.54mm pitch header)

Function	JP2
Normal(Default)	1-2Open
Clear CMOS	1-2 Shorted

Table 2-3. Clear CMOS setting

CF Card Master/Slave select (JP3: 2-pin 2.54mm pitch header)

Function	JP3
Master(Default)	1-2Open
Slave	1-2 Shorted

Table 2-4. CF Card Master/Slave select

Main Board Pin Assignments

Connector	Function
ATX2	ATX Power_12V Connector
CFD1	Compact Flash Socket
CN1	ATX Power Control Connector
CN2	LVDS Channel Connector
CN4	Internal Keyboard Connector
CN5	AC97 Connector
CN6-8	USB Connector
COM1	RS-232 Serial Port Connector
COM2	RS-232/422/485 Serial Port Connector
DIMM1	240 Pin DDRII DIMM Socket Channel A
DIMM2	240 Pin DDRII DIMM Socket Channel B
FAN1	CPU Fan Connector
FDD1	Floppy Connector
FP1	Front Panel 1 Connector (Reset/ HD Led/ Speaker/)
FP2	Front Panel 2 Connector (P_LED/ P_BT /KB_ Lock/SMB)
IDE1	EIDE Connector
LPT1	LPT Port Connector
MPCI1	Mini PCI Socket
SATA1-4	Serial ATA Connector

Table 2-5. 8193 Main Board Connector Descriptions

ATX Power_12V Connector (ATX2: 2x2 pin female):

PIN	SIGNAG	PIN	SIGNAL
1	Ground	3	+12v
2	Ground	4	+12v

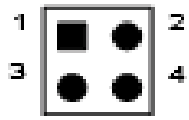


Table 2-6. ATX Power_12V Connector

Compact Flash slot (CFD1):

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	D3
3	D4	4	D5
5	D6	6	D7
7	CS0#	8	A10
9	ATASEL#	10	A9
11	A8	12	A7
13	VCC	14	A6
15	A5	16	A4
17	A3	18	A2
19	A1	20	A0
21	D0	22	D1
23	D2	24	IOCS16#
25	CD2	26	CD1
27	D11	28	D12
29	D13	30	D14
31	D15	32	CS1#
33	VS1	34	IORD#
35	IOWR#	36	WE#
37	INTRQ	38	VCC
39	CSEL#	40	VS2#
41	RESSET#	42	IORDY
43	INPACK#	44	REG#
45	DASP#	46	PDIAG#
47	D8	48	D9
49	D10	50	GND

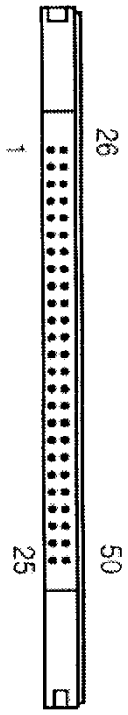


Table 2-7. Compact Flash Slot pin definition

ATX Power Control Connector (CN1: Wafer 2-pin M 2.54mm):

PIN	SIGNAL
1	PS-ON
2	+5VSB

Table 2-8. ATX Power Control Connector

Dual Channel LVDS Connector (CN2):

PIN	SIGNAL	PIN	SIGNAL
1	BKLEN	2	BKLCTL
3	PPVCC	4	PPVCC
5	CH1_CLK#	6	CH2_CLK#
7	CH1_CLK	8	CH2_CLK
9	GND	10	GND
11	CH1_TX0#	12	CH2_TX0#
13	CH1_TX0	14	CH2_TX0
15	CH1_TX1#	16	CH2_TX1#
17	CH1_TX1	18	CH2_TX1
19	CH1_TX2#	20	CH2_TX2#
21	CH1_TX2	22	CH2_TX2
23	CH1_TX3#	24	CH2_TX3#
25	CH1_TX3	26	CH2_TX3
27	GND	28	GND
29	I2C_DATA	30	I2C_CLK

Table 2-9. Dual Channel LVDS Connector

Internal Keyboard Connector (CN4: Wafer 5-pin male):

PIN	SIGNAL
1	KB Clock
2	KB Data
3	N.c
4	GND
5	VCC

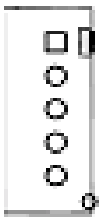


Table 2-10. Internal Keyboard Connector

AC'97 Connector (CN5: Wafer Box 5x2 pin M 2.0mm):

PIN	SIGNAL	PIN	SIGNAL
1	AC_RST-	2	AC_SYNC
3	GND	4	AC_DAOUT
5	AC_DAIN2	6	GND
7	GND	8	AC_BCLK
9	+5v	10	+3.3v

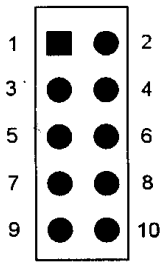


Table 2-11. AC'97 Connector

USB0/1, 2/3, 4/5 Headers (CN6-8: 5x2-pin header 2.54mm pitch)

PIN	SIGNAL	PIN	SIGNAL
1	+5v	2	+5v
3	USBD1-	4	USBD2-
5	USBD1+	6	USBD2+
7	GND	8	GND
9	“key”	10	GND

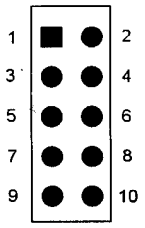


Table 2-12. USB0/1, 2/3, 4/5 Headers

RS232 Serial Port Header (COM1: 5x2 box header 2.54mm pitch)

PIN	SIGNAL	PIN	SIGNAL
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C

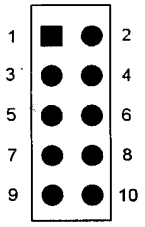


Table 2-13. RS232 Serial Port Header

RS232/422/485 Serial Port Header (COM2: 5x2 box header 2.54mm pitch)

PIN	SIGNAL	PIN	SIGNAL
1	DCD(422TXD-/485DATA-)	2	RXD(422RXD+)
3	TXD(422TXD+/485DATA+)	4	DTR(422RXD-)
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	N.C

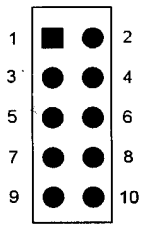


Table 2-14. RS232/422/485 Serial Port Header

CPU Fan Connector (Fan1: Wafer 4-pin male 2.5mm pitch)

PIN	SIGNAL
1	GND
2	+12v
3	Speed Sense
4	Speed Control

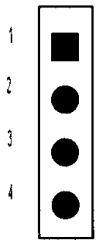


Table 2-15. CPU Fan Connector

Floppy Connector (FDD1: 17x2 box header 2.54mm pitch)

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	#REDWC(#DENSITYSEL)
3	GND	4	N.C
5	GND	6	#DS1
7	GND	8	#INDEX
9	GND	10	#MOTOR A
11	GND	12	#DRIVE SELECT B
13	GND	14	#DRIVE SELECT A
15	GND	16	#MOTOR B
17	GND	18	#DIR
19	GND	20	#STEP
21	GND	22	#WRITE DATA
23	GND	24	#WRITE GATE
25	GND	26	#TRACKO
27	GND	28	#WRITE PROTECT
29	GND	30	#READ DATA
31	GND	32	#SIDE1(#HEADSEL)
33	GND	34	#DISK CHANGE

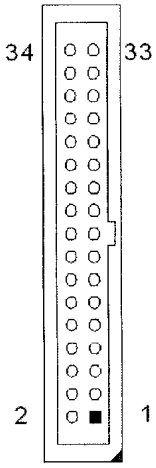
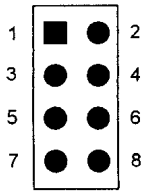


Table 2-16. Floppy Connector

Front Panel 1 Connector (FP1: 4x2-pin 2.54mm pitch):

PIN	SIGNAL	PIN	SIGNAL
1	Reset Switch(+)	2	External Speaker(+)
3	Reset Switch(-)	4	NC
5	IDE LED(+)	6	Internal Speaker
7	IDE LED(-)	8	External Speaker(-)



Pins 2, 8: External Speaker wire

Pins 6-8 shorted: Internal Speaker Enable (default)

Table 2-17. Front Panel 1 Connector pin definition

Front Panel 2 Connector (FP2: 5x2-pin 2.54mm pitch):

PIN	SIGNAL	PIN	SIGNAL
1	Power LED(+)	2	Power on Button(+)
3	NC	4	Power on Button(-)
5	Power LED(-)	6	NC
7	Key Board Lock(+)	8	I2C Bus SMB Data
9	GND	10	I2C Bus SMB Clock

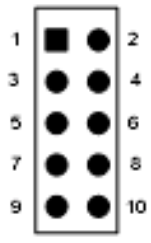


Table 2-18. Front Panel 2 Connector pin definition

EIDE Connector (IDE1: 20x2 box header 2.54mm pitch)

PIN	SIGNAL	PIN	SIGNAL
1	IDE RESET	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	N.C
21	REQ	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND
27	IO READY	28	GND
29	DACK	30	GND
31	IRQ14	32	N.C
33	ADDR1	34	UDMA DETECT
35	ADDR0	36	ADDR2
37	CS#1	38	CS#3
39	LED	40	GND

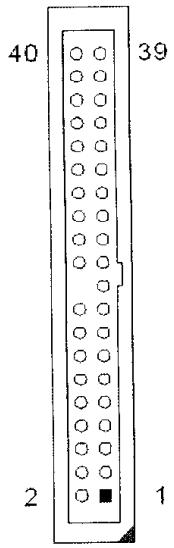


Table 2-19. EIDE Connector

LPT Port Connector (LPT1: 13x2 box header 2.54mm pitch)

PIN	SIGNAL	PIN	SIGNAL
1	Line Printer Strobe	14	Auto Feed
2	PD 0,Parallel Data 0	15	Error
3	PD 1,Parallel Data 1	16	Initialize
4	PD 2,Parallel Data 2	17	Select
5	PD 3,Parallel Data 3	18	Ground
6	PD 4,Parallel Data 4	19	Ground
7	PD 5,Parallel Data 5	20	Ground
8	PD 6,Parallel Data 6	21	Ground
9	PD 7,Parallel Data 7	22	Ground
10	ACK ,Acknowledge	23	Ground
11	Busy	24	Ground
12	Paper Empty	25	Ground
13	Select		

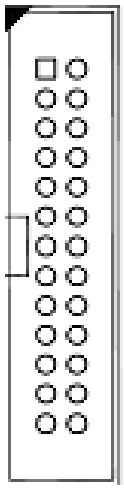


Table 2-20. LPT Port Connector

Serial ATA Connector (SATA1-4: 7-pin "L" type)

PIN	SIGNAL	PIN	SIGNAL
1	GND	2	SATA_TXP
3	SATA_TXN	4	GND
5	SATA_RXN	6	SATA_RXP
7	GND		

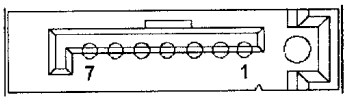


Table 2-21. Serial ATA Connector

Rear Panel Pin Assignments

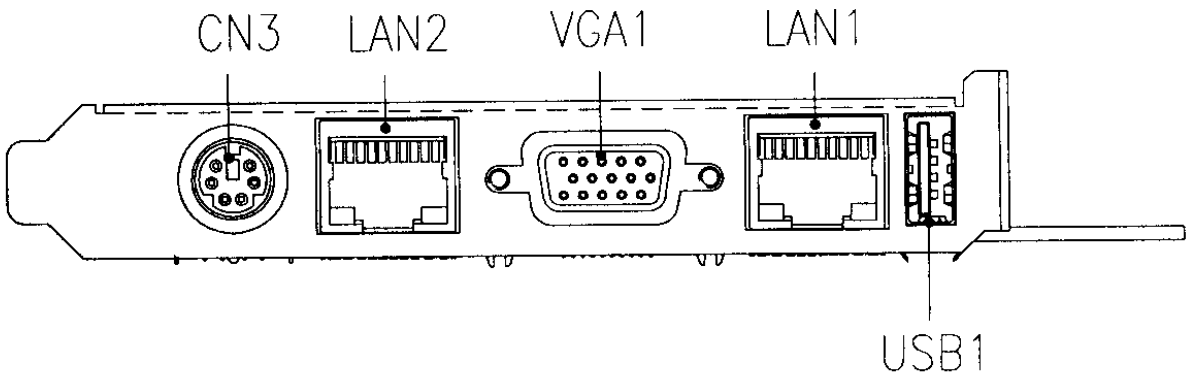


Figure 2-3. Rear Panel connector locations

Connector	Function
CN3	PS2 Mouse / Keyboard Connector
LAN2	100/1000 Base-T Ethernet Connector
VGA1	VGA Display Connector
LAN1	100/1000 Base-T Ethernet Connector
USB1	USB Type-A Connector

Table 2-22. 8193 Rear Panel Connector Descriptions

Keyboard/Mouse Connector (CN3: 6-pin purple Mini DIN)

PIN	SIGNAL	PIN	SIGNAL
1	Keyboard data	2	Mouse data
3	Ground	4	+5V
5	Keyboard clock	6	Mouse clock

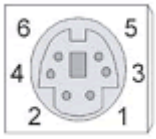
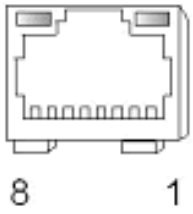


Table 2-23. Keyboard/Mouse Connector

10/100/1000 Base-Tx Ethernet Connectors (LAN1/2: RJ-45)

PIN	SIGNAL	PIN	SIGNAL
1	MDI 0+	2	MDI 0-
3	MDI 1+	4	MDI 1-
5	MDI 2+	6	MDI 2-
7	MDI 3+	8	MDI 3-



LAN LED	Function
Yellow	LINK / ACTIVE
OFF / Green / Orange	Speed 10 / Speed 100 / Speed 1000

Table 2-24. 10/100/1000 Base-Tx Ethernet Connectors

VGA Display Connector (VGA1: D-Sub 15-pin female)

PIN	SIGNAL	PIN	SIGNAL
1	Red	2	Green
3	Blue	4	NC
5	Ground	6	Ground
7	Ground	8	Ground
9	VCC	10	Ground
11	NC	12	DDC Data
13	Hsync	14	Vsync
15	DDCCLK		

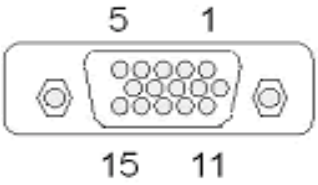


Table 2-25. VGA Display Connector

USB1 Connector (USB1: 4-pin Type A female)

PIN	SIGNAL
1	VCC
2	USB1-
3	USB1+
4	GND

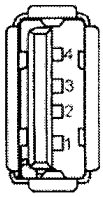


Table 2-26. USB1 Connector